

## **Weekly Summary Report**

### **USEPA Oversight, Sauget Area 2, Sauget, IL**

### **WA No. 224-RXBF-05XX / Contract No. 68-W6-0025**

**Week Ending Friday November 7, 2003**

This report summarizes the Remedial Action (RA) work conducted by Solutia and its contractors from November 1, 2003 through November 7, 2003. The current RA fieldwork consists of barrier wall trenching and site preparation.

## **Contractors Onsite**

Advent Environmental (consultant for Solutia)  
Golder Associates (consultant for Solutia)  
Harriss Drilling (drilling contractor to Inquip)  
Inquip Associates Inc. (barrier wall construction contractor)  
Lowry Electric (electrical contractor to Solutia)  
Meuser Rutledge Consulting Engineers (design consultant for Inquip)  
Pangea Group (construction support services, primary subcontractor to Inquip)  
PSI (Professional Service Industries) (geotechnical testing services, subcontractor to Inquip)  
Strata Services (Jet Grouting Specialist, contractor to Solutia)  
URS (primary consultant for Solutia)  
Zahner Survey (surveyors contracted to Inquip)

## **Work Performed This Week**

### **Groundwater Migration Control System (GMCS)**

The Groundwater Migration Control pumping system flow rate decreased gradually through the week from approximately 1750 to 1420 gallons per minute (i.e. between 585 and 472 gallon per minute per extraction well). The system continues to operate fully automatically based on the river stage, piezometers, and the control system program. The river level increased during the week from approximately 378 feet on November 1, to approximately 385 feet above mean sea level on November 7, 2003.

Piezometer P4E produced erratic readings during the week for about one day. The erratic readings were found to be caused by the placement of the tall HDPE pipe surrounding the surge protector which had initially pinched a wire. After moving the pipe, the readings for the piezometer returned to normal.

### **Site Preparation**

Pangea continued work during the week to extend the work platform, upon which the KH1266 trackhoe and Liebherr cranes operate, to the south. The work platform between stations 11+00 and 5+00 was completed during the week to the required elevation. Rock tailings were delivered to the site, leveled and compacted in 1-foot lifts to build the work platform. Additionally, a work pad area that includes extending the access road and

providing an area for spoils was constructed with rock tailings during the week. In the section between station 9+00 and 5+00 this access road extends onto the top of the landfill.

Pangea removed the fence along the southern edge of Riverview Drive during the week to start to prepare for the northern alignment of the barrier wall. This fence does not affect site security. The area was cleared of vegetation. Zahner surveyed the area and marked the location of the barrier wall during the week.

### **Stabilization Issue**

Meuser Rutlege were onsite during the week to oversee the installation of four piezometers located under the work platform in the area of soft soils in the south of Site R. The drilling work was performed by Harriss Drilling.

The four piezometers installed were each drilled to 20 feet below ground surface with the vibrating wire transducers pushed an additional 4 to 6 feet into the ground. Thus, the transducers were installed in direct contact to the surrounding ground.

The piezometers / transducers were installed to monitor the subsurface conditions during the barrier wall construction, specifically to watch for a potential increase in soil pore pressure. Readings in the four piezometers were all negative, indicating that the soil in the surrounding area is not saturated by the water table. While monitoring the soil stability in the area, it is hoped the transducer readings will remain negative. This would indicate that the pore pressure in the soil has not increased under the weight and pressure of the large machinery operating in the trench.

### **Box Culvert Issue**

The discharge from the box culvert was sampled by Golder Associates on November 4, 2003. Samples were collected for VOCs, SVOCs, PCBs, pesticides, herbicides, RCRA metals, and chlorine analysis. The samples will be sent to Severn Trent laboratory in St. Louis for analysis on a standard 14-day turnaround time.

Due to the increase in level of the Mississippi River during the week, the steel plate over the box culvert was three quarters submerged by the river by November 7, 2003. One of the valves on the end of the box culvert remains partially cracked open.

Strata Services were onsite on November 6, 2003 to start an evaluation to possibly grout a seal into the box culvert.

### **Slurry Mixing**

Approximately 115 tons of bentonite gel was used to mix slurry this week. The slurry, when pumped from the south holding pond to the trench, was tested frequently to assess its viscosity and adjusted with a water blending pump as necessary. The viscosity of the slurry was measured by recording the time to filter the slurry into a fixed volume container. The viscosity values obtained during the week were generally satisfactory.

### **Spoils Handling**

During the week, spoils were transferred from the western portion of the exclusion zone adjacent to the barrier wall trench to the spoils containment area on top of the landfill. Spoils were scooped up using a trackhoe, placed into a specially-modified dump truck and transported to the landfill. This spoils containment area was used for drying spoils during the week.

## **Barrier Wall Construction**

Inquip has opened the trench to approximately 990 feet in length along the barrier wall alignment, from station 27+50 towards station 17+60 (please refer to Solutia's map for locations). In general, a small backhoe was used to excavate the first 10 feet and then KH1266 trackhoe continued trenching up to 95 feet in depth while the clamshell rigs were used subsequently to complete the excavation down to bedrock.

Both clamshell rigs were functional throughout the week. However, on November 5, the Koehring KH1266 trackhoe started to experience an engine problem and the rig was out of service for the remainder of the week. It was determined the swiftest way to repair the trackhoe was to replace the motor (with a cracked piston ring) with a new motor. The old motor was removed on November 7, Inquip hopes to have the rig back in operation by November 12.

Bentonite slurry was pumped into the trench as needed to keep the excavation open. The depth to slurry in the trench was consistently maintained at less than two feet below ground surface. The slurry in the trench, together with the slurry from the south holding pond, were tested two to three times a day for the following parameters: viscosity, density, filtrate loss, pH, and sand content. The test results were satisfactory and met the minimum requirements specified for the barrier wall construction.

Trench depths continued to be measured once daily (AM) during the week and every 100 linear feet of trench with 20-foot spacing of measurements delineating the toe of the backfill. The morning trench depth measurements from November 7 that depict the weekly progress are shown in Table 1. Construction progress by November 7, 2003 is shown below. Graph 1 shows the progress of the trench in comparison to the previous week. Graph 2 shows the overall progress of the barrier wall construction.

During the week, Inquip mixed and placed into the trench approximately 310 cubic yards of backfill material. The backfill consists of spoils with the addition of approximately 3 percent granular bentonite in dry weight. Backfill was 'back-tracked' into the trench using a bulldozer.

The backfill was tested by PSI for slump, unit weight and moisture content. The unit weight of backfill placed on November 3, was measured at 117 pounds per cubic foot (pcf) and the backfill placed on November 5, was 113 pcf. All test results met the minimum requirements. Additional tests on the backfill, including permeability, were to be tested off site by Inquip's contract laboratory.

Prior to the backfill operation, the bottom of trench was cleaned thoroughly using one of the clamshell rigs. Depth-to-bottom measurements were made every 10 linear feet of trench to ensure the bottom of the trench was at a consistent depth and on top of bedrock. These depth measurements were performed with the clamshell rig's instrumentation and confirmed in two locations manually with the downrigger (plumbob and tape). Additionally, two samples with a clam sampler were collected by URS and PSI from the top of the placed backfill in the trench prior to adding more backfill. These backfill samples were visually checked to ensure that the trench bottom was clean and free of any sand.

Zahner Survey were onsite November 1, 2003 installing 'elevation hubs' every 10 feet along the side of the open trench. The elevation hubs were then used during trench cleaning as a reference point for the total trench depth. Thus, starting November 3, the trench depth was verified using the downrigger and referenced to a surveyed elevation. Prior to November 3,

the trench depth was referenced to ground surface.

**Table 1 – Depths-to-bottom Measurements for the Barrier Wall Trench (Morning of November 7, 2003)**

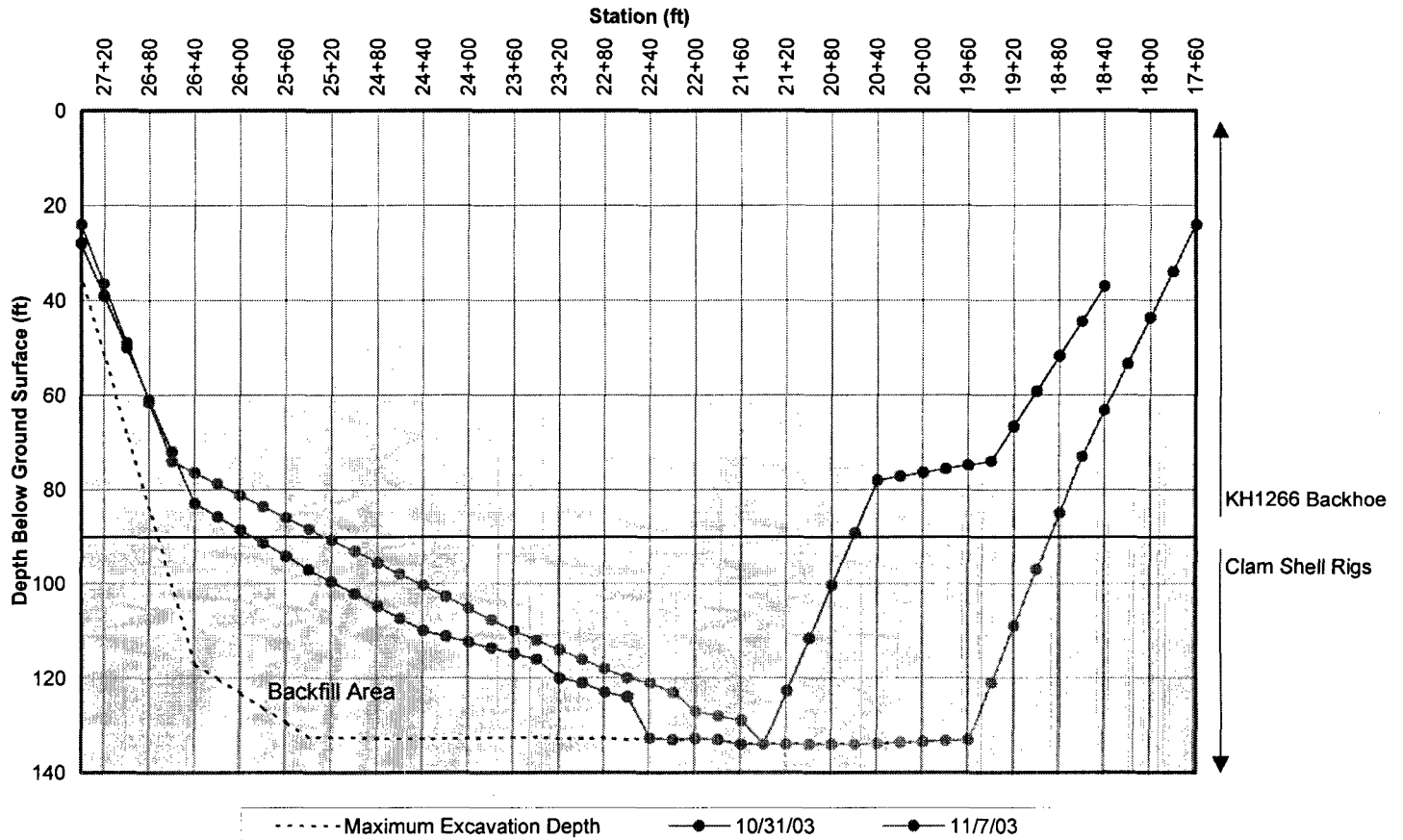
Station ID	Depth to bottom (ft below ground surface)
17+60	24
18+60	73
19+60	133
20+60	134
20+80	134
21+00	134
21+20	134
21+40	134
21+60	129
21+80	128
22+00	127
22+20	123
22+40	121
22+60	120
23+60	110
24+60	98
25+60	86
26+60	74
27+40	24

Note: Distances between stations where trench depth measurements were read varies in Table 1. Measurements are separated by 100 linear feet of trench in most areas, however, the area that delineates the toe of the backfill is measured every 20 feet.

## Construction Progress

Graph 1

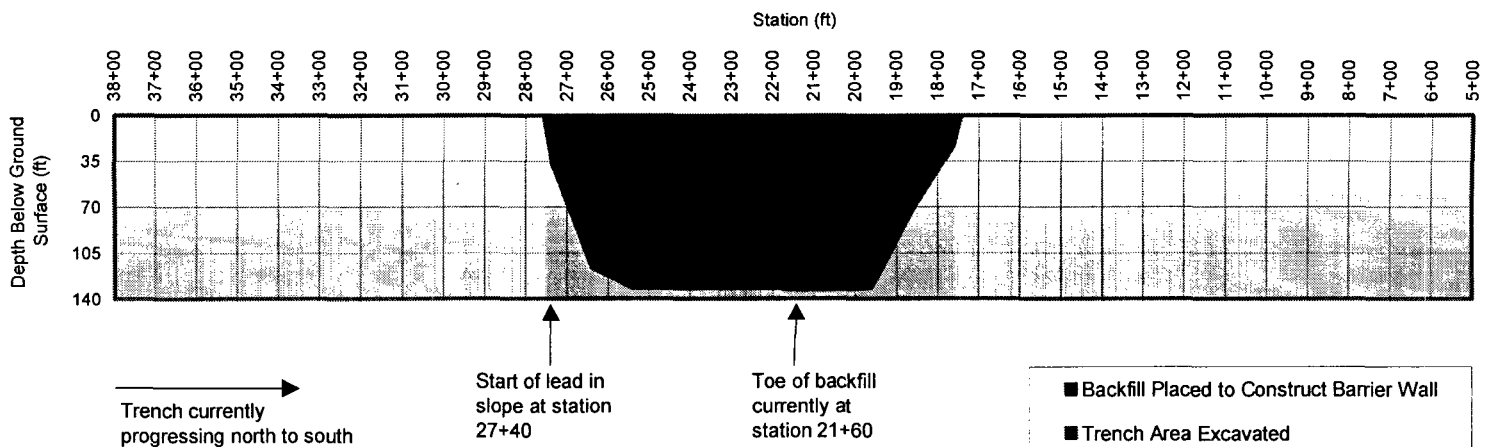
### Weekly Barrier Wall Construction Progress Nov. 1st to Nov. 7th 2003



**Note:** Data plotted for week through AM measurements on 10-31-03. PM trench measurements have ceased.  
Some data points are interpolated between the available data points where trench depth measurements were read.

Graph 2

### Barrier Wall Construction Progress by November 7, 2003



## **Health and Safety**

Inquip lead a work standdown on November 7, 2003 to emphasize safety for all workers on site. Inquip and Solutia conducted an additional safety briefing and a copy of the health and safety plan was given to each worker.

## **Other Activities**

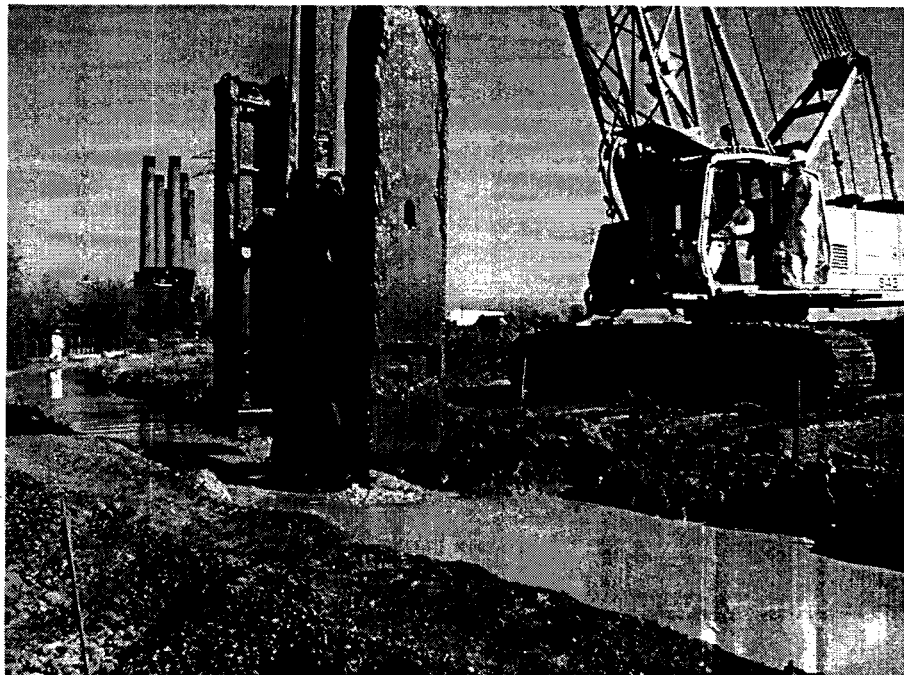
Lowry Electric, together with Pangea, continued work during the week to construct the Freeze Protection System for the Stormwater Treatment System. Advent Environmental were onsite to oversee work on the Stormwater Treatment System and start a design for the flocculation system to be added to the Stormwater Treatment System. The freeze protection system includes: (1) installing a recirculation loop for water through the filtration skid and carbon treatment columns, (2) installing a tent with heat lamps over the filtration skid, (3) installing heat tracing, and (4) placing concrete blankets over pipes for insulation.

Lowry Electric has neared completion of the installation of the heat tracing on the exposed pipeline for the system. Pangea finished constructing an insulated box around the recirculation pump, located within the shed. The concrete blankets and tent over the filtration skid will be worked on in the coming weeks.

*Photos from week – November 1 through November 7, 2003:*



Measuring trench depth with downrigger (November 3, 2003).



Cleaning the trench with clamshell rig, prior to backfill (November 3, 2003).



Backfill sampled from trench with clam sampler is checked for the presence of sand  
(November 5, 2003).